# (19) World Intellectual Property Organization International Bureau



04 FEB 2005

(43) International Publication Date 26 February 2004 (26.02.2004)

PCT

(10) International Publication Number WO 2004/016283 A3

- (51) International Patent Classification<sup>7</sup>: C07K 19/00, A61K 39/39, 39/385, C12N 15/70, 1/21, 5/10, A61K 48/00
- (21) International Application Number:

PCT/EP2003/008926

- (22) International Filing Date: 12 August 2003 (12.08.2003)
- (25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 02292042.5

14 August 2002 (14.08.2002) EP

- (71) Applicant (for all designated States except US): AVIDIS SA [FR/FR]; Biopole Clermont-Limagne, F-63360 Saint Beauzire (FR).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): ANDREOLETTI, Pierre [FR/FR]; Avidis SA, Biopole Clermont-Limagne, F-63360 Saint-Beauzire (FR). DUMON, Laurence [FR/FR]; Avidis SA, Biopole Clermont-Limagne, F-63360 Saint-Beauzire (FR). HILL, Fergal [IE/FR]; Avidis SA, Biopole Clermont-Limagne, F-63360 Saint-Beauzire (FR). JULIEN, Michel [FR/FR]; Avidis SA, Biopole Clermont-Limagne, F-63360 Saint-Beauzire (FR). MARCHAND, Jean Baptiste [FR/FR]; Avidis SA, Biopole Clermont-Limagne, F-63360 Saint-Beauzire (FR). RISSE, Emmanuel [FR/FR]; Avidis SA, Biopole Clermont-Limagne, F-63360 Saint-Beauzire (FR).

- (74) Agents: BRASNETT, Adrian, H. et al.; Mewburn Ellis, York House, 23 Kingsway, London, Greater London WC2B 6HP (GB).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

#### Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments
- (88) Date of publication of the international search report:

  3 June 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: HETEROPOLYMERIC COMPOUND COMPRISING A SCAFFOLD, AN ADJUVANT AND AN ANTIGEN, AND ITS USE

(57) Abstract: The present invention provides a product comprising: a first component which is a scaffold; a second component which is an adjuvant, preferably a polypeptide which is a ligand for CD21 or a cell surface molecule on B cells or T cells or follicular dendritic or other antigen presenting cells; and a third component which is an antigen.

#### INTERNATIONAL SEARCH REPORT

Internation No

PCT/EP 03/08926 - I TENERS Ā61K39/385 C12N15/70 C12N1/21 C12N5/10 A61K48/00 According to International Patent Classification (IPC) or to both national classification and IPC B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) IPC 7 A61K Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the International search (name of data base and, where practical, search terms used) BIOSIS, EMBASE, WPI Data, PAJ, EPO-Internal, SEQUENCE SEARCH C. DOCUMENTS CONSIDERED TO BE RELEVANT Relevant to claim No. Citation of document, with indication, where appropriate, of the relevant passages Category \* 1-4,8, χ WO 00 69907 A (MEDICAL RESEARCH COUNCIL) 23 November 2000 (2000-11-23) 10-15, 17-20 cited in the application page 4, 11ne 30 - line 31 page 9, line 28 -page 10, line 2 page 12, line 5 - line 6 page 14, line 14 - line 15 page 14, line 29 - line 30 page 20, line 20 -page 21, line 12 claim 23 Further documents are listed in the continuation of box C. Patent family members are listed in annex. Χ . Special categories of cited documents: "T" later document published after the International filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the "A" document defining the general state of the art which is not considered to be of particular relevance invention "E" earlier document but published on or after the international 'X' document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) involve an inventive step when the document is taken alone document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such document. O' document referring to an oral disclosure, use, exhibition or ments, such combination being obvious to a person skilled document published prior to the international filing date but later than the priority date claimed '&' document member of the same patent family Date of mailing of the international search report Date of the actual completion of the International search 31 March 2004 15/04/2004

Form PCT/ISA/210 (second sheet) (January 2004)

European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016

Name and mailing address of the ISA

Authorized officer

Nooij, F

## INT NATIONAL SEARCH REPORT

Interna, lal Application No PCT/EP-03/08926

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Κ	WO 91 11461 A (BIOGEN, INC.) 8 August 1991 (1991-08-08) cited in the application page 6, line 1 - line 11 page 7, line 10 - line 16 page 9, line 32 -page 10, line 7	1-3, 8-12,14, 15,17-21
<b>(</b>	page 27, line 17 -page 29, line 14 page 29, line 32 -page 30, line 15 GB 2 282 813 A (MERCK & CO., INC.)	1,3,4,
,	19 April 1995 (1995-04-19) examples claims	10,11
	E. SHINYA ET AL.: "In-vivo delivery of therapeutic proteins by genetically-modified cells: comparison of organoids and human serum albumin alginate-coated beads." BIOMEDICINE AND PHARMACOTHERAPY, vol. 53, December 1999 (1999-12), pages 471-483, XP002231127 Paris, France cited in the application abstract	1-3, 8-12,18, 20,21
X	WO 01 00231 A (SMITHKLINE BEECHAM BIOLOGICALS) 4 January 2001 (2001-01-04) the whole document	1,3,5-7, 10,11
A	A. KOL ET AL.: "Cutting edge: Heat shock protein (HSP) 60 activates the innate immune response: CD14 is an essential receptor for HSP60."  THE JOURNAL OF IMMUNOLOGY, vol. 164, no. 1, 1 January 2000 (2000-01-01), pages 13-17, XP002262385  Baltimore, MD, USA abstract	2,12,13, 18
A	WO 99 35260 A (ADPROTECH PLC) 15 July 1999 (1999-07-15) cited in the application examples claims	1-15

Form PCT/ISA/210 (continuation of second sheet) (January 2004)

### INT. NATIONAL SEARCH REPORT

Information on patent family members

Intermal Application No PCT/EP 03/08926

								•
Pa	itent document I in search report		Publication date		Patent family member(s)		Publication date	- :
WO	0069907	Α	23-11-2000	AU	4770300	A	05-12-2000	
				AU	4933200	Α	05-12-2000	
				CA	2372198	A1	23-11-2000	
				CA	2372199		23-11-2000	
				EP	1179013	A1	13-02-2002	
				EP	1189934	A2	27-03-2002	
				WO	0069907	A1	23-11-2000	
				WO	0069886	A2	23-11-2000	
				JP	2002544285	T	24-12-2002	
				JP	2003502024	T	21-01-2003	
				US	2002193564	A1	19-12-2002	
				US	2002137891	A1	26-09-2002	
WO	9111461	Α	08-08-1991	AU	7328891	A	21-08-1991	
				CA	2049964	A1	27-07-1991	
				ΕP	0465633	A1	15-01-1992	
				JP	4506460	T	12-11-1992	
				WO	9111461	A1	08-08-1991	
GB	2282813	Α	19-04-1995	NONE				
WO	0100231	Α	04-01-2001	AU	5977700	A	31-01-2001	
				CA	2376926		04-01-2001	
				WO	0100231		04-01-2001	
				EP	1198243		24-04-2002	
WO	9935260	Α	15-07-1999	AU	757021	B2	30-01-2003	
				AU	1776299		26-07-1999	
				CA	2317020	A1	15-07-1999	
				EP	1042467		11-10-2000	
				WO	9935260		15-07-1999	
				JP	2002500042	T	08-01-2002	